Some documents and websites

White paper: hep-ex/0211001

Short paper: Physical Review D68, 012002, 2003

Update to studies: hep-ex/0407047

Accelerator paper: BNL-73210-2004-IR (sent to DOE)

You can obtain all of these at website: nwg.phy.bnl.gov

- The experiment is technically feasible. Costs include AGS upgrade, Hill, Proton transp., horns, decay tunnel.
- Cost does not include detector in an underground laboratory.

  The detector has applications beyond accelerator neutrinos. Proton decay, supernova neutrinos, atmospheric neutrinos, etc.

  Recent study shows that backgrounds for neutrino experiment are manageable. More simulation studies needed.

BNL effort

The working group has about 40 members.

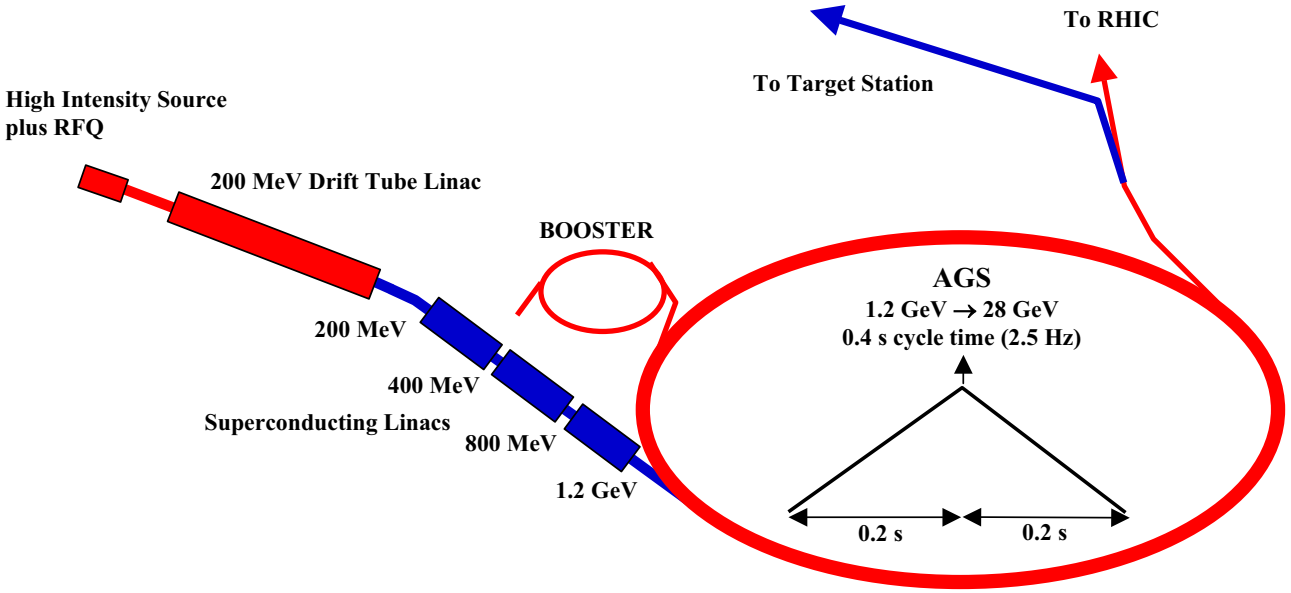
Physics members are about 10. Rest are from CAD. We also have a loose collaboration with the Stonybrook neutrino group focussed on software development for simulations.

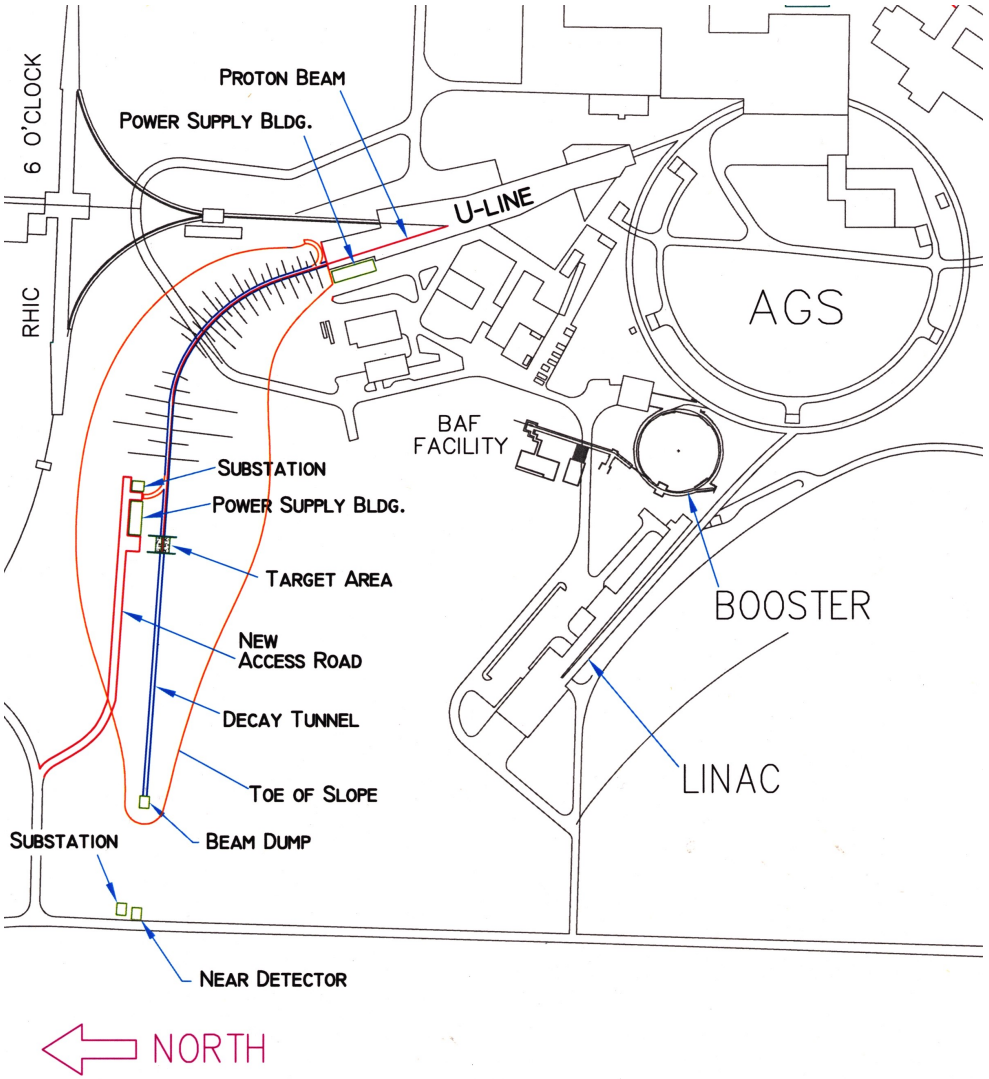
Direct support from BNL is through 1 LDRD grant: No. 04-043: \$106000/year for 2 years. The LDRD grant will expire in early 2006.

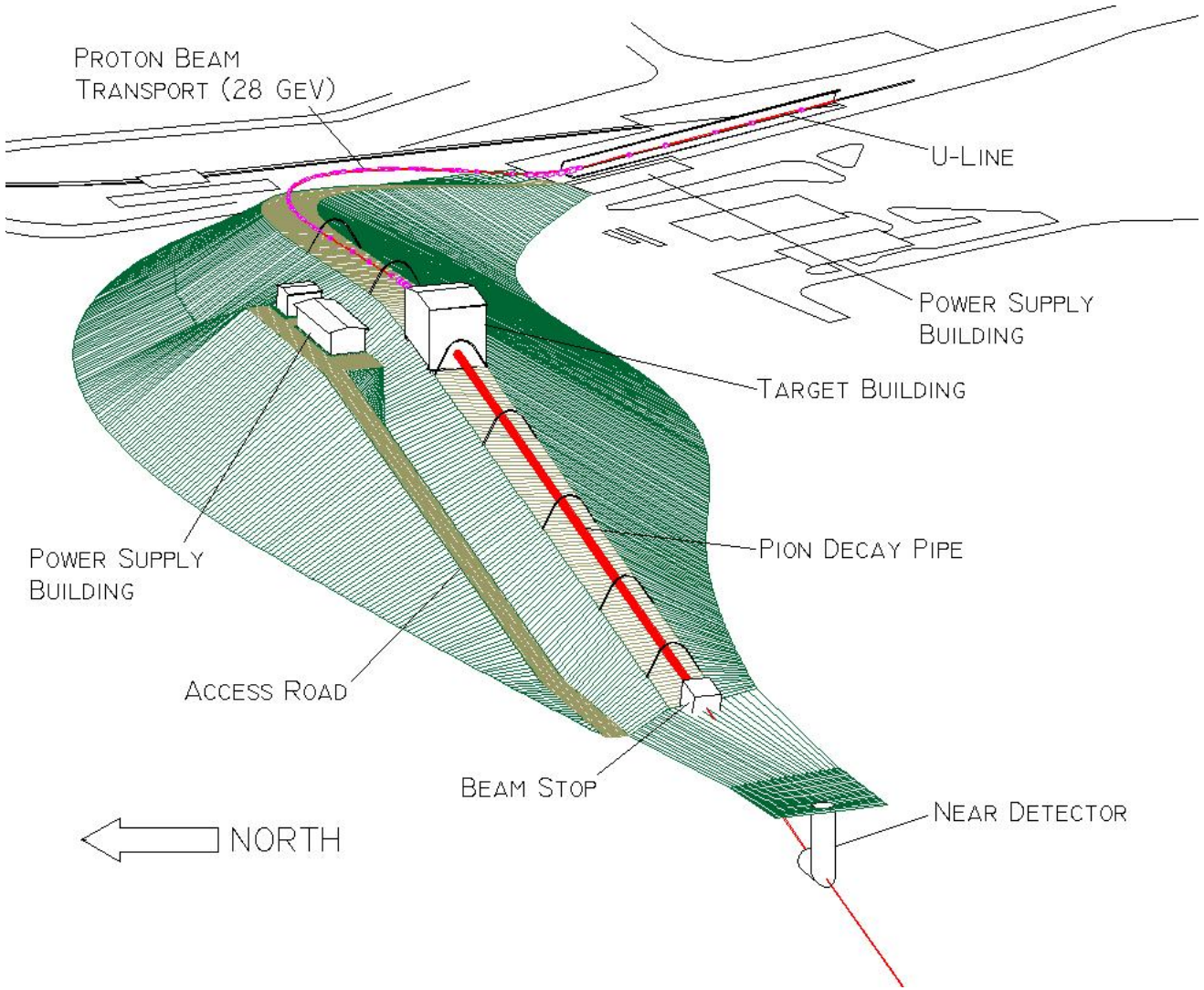
Some of the effort is going in the direction of participation in a Deep Underground Science Laboratory. This is an NSF initiative, at moment being led from Berkeley.

The Accelerator

- Conceptually simple upgrade. No magic.
- Run 28 GeV AGS at 2.5 Hz to get 1 MW.
- Need faster proton source: Super Conducting LINAC at 1.2 GeV
- Current: $7 \times 10^{13} ppp$ at 0.5 Hz => LINAC: $10^{14} ppp$ at 2.5 Hz.




6 O'CLOCK
RHIC
PROTON BEAM
POWER SUPPLY BLDG.
U-LINE
AGS
BAF
FACILITY
SUBSTATION
POWER SUPPLY BLDG.
TARGET AREA
NEW
ACCESS ROAD
DECAY TUNNEL
TOE OF SLOPE
BEAM DUMP
SUBSTATION
NEAR DETECTOR
BOOSTER
LINAC
NORTH


PROTON BEAM
TRANSPORT (28 GEV)
U-LINE
POWER SUPPLY
BUILDING
TARGET BUILDING
POWER SUPPLY
BUILDING
PION DECAY PIPE
ACCESS ROAD
BEAM STOP
NEAR DETECTOR
NORTH

AGS Super Neutrino Beam	EDIA	M&S	Labor	Total
LINAC system	6,897,116	98,556,970	16,783,762	122,219,848
AGS upgrade	10,496,245	53,619.159	6,472,590	70,587,994
Target and Horn system	664,742	3,417,152	1,208,338	5,290,232
Conventional Facility	7,550,300	60,090,300	1,210,700	68,851,300
ES&H	104,652	275,211	437,355	817,218
Project Support	1,148,681	384,109	4,096,963	5,629,753
Total	26,943,736	216,342,901	30,209,709	273,396,345

Table 1: Direct FY04 cost summary. Total becomes $ 406.9M in FY04 dollars including 30% contingency and BNL project overhead (14.5%).